

# Operating Guide

TO HELP YOU

ENJOY YOUR NEW

# Zenith



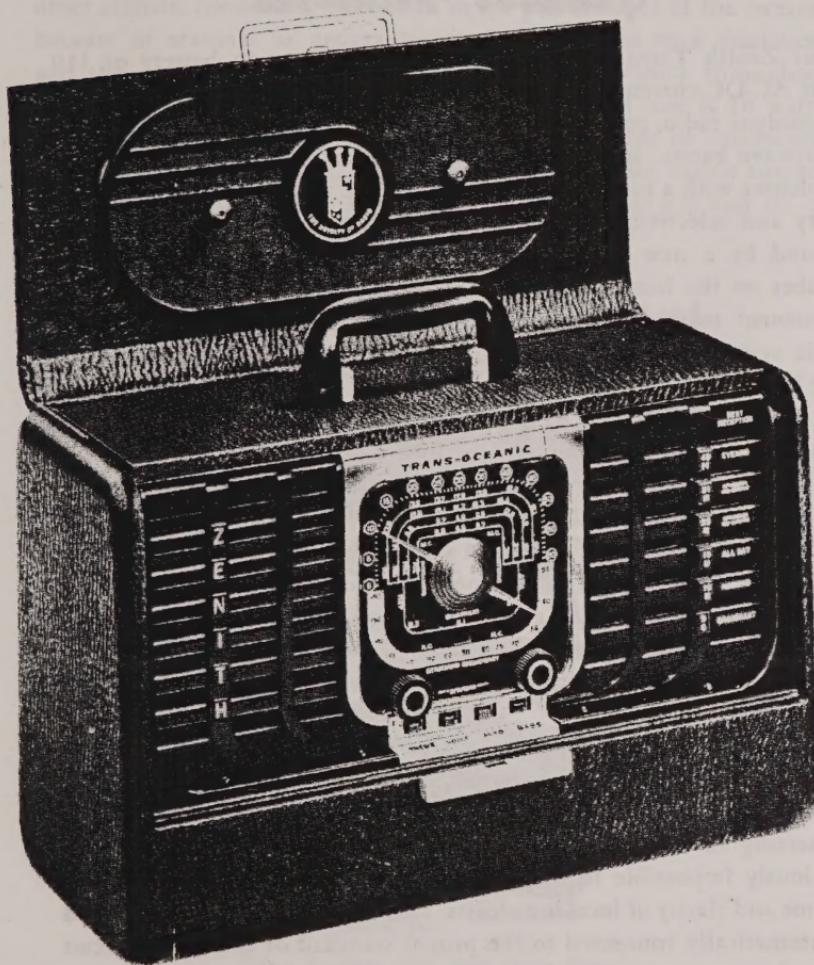
TRANS-OCEANIC  
PORTABLE

MODEL G500

CHASSIS SG40



# Zenith



**TRANS-OCEANIC**

**PORTABLE**

***There Is a World of Entertainment and Pleasure  
In Your New Zenith Portable  
General Features***

Your Zenith Trans-Oceanic portable will operate on battery or 110 Volt AC-DC current. It uses a selenium rectifier and is a 5 tube super-heterodyne radio, covering the standard broadcast and foreign domestic shortwave bands. It has seven tuned circuits, and a 3 section tuning condenser with a tuned radio frequency stage insuring maximum sensitivity and selectivity. Freedom from blasting on powerful stations is assured by a new automatic volume control circuit which controls 3 tubes on the broadcast band. A Deluxe Alnico 5, rubber mounted, permanent magnet, speaker in conjunction with a greatly improved audio system provides greater undistorted power, and finer tone than ever before.

The four button "RADIORGAN" tone control permits selection of 16 different tone combinations. The built in removable WAVE-MAGNET provides reception in trains, planes, automobiles, boats, and steel constructed buildings. This standard Wavemagnet is located on the inside of the front cover and a special extension cable is provided for its use on windows of automobiles, planes, trains, etc. To bring in shortwave stations with greatly added volume turning the knob on the top right hand corner of the cabinet allows a WAVEROD Antenna to snap up, which when fully extended, provides increased pick up for shortwave reception.

Two terminals have been provided at the left rear of the chassis marked "A" and "G" for external antenna and ground connections. These are for use in areas of extremely low signal strength. By merely connecting an external antenna and ground to these terminals, signals previously impossible to obtain are in many cases received with the volume and clarity of local broadcasts. This external antenna and ground is automatically connected to the proper standard or shortwave circuit when the operator presses the band selector buttons.

The band selector buttons on the front panel provide an easy means of selecting the standard broadcast (BC) or the shortwave band most suitable to the time of day. Each shortwave band is electrically SPREAD, which means that stations are separated from each other to a

degree permitting great ease of tuning. A calibrated second scale has been incorporated in the top edge of the dial face. It permits short-wave stations to be accurately logged and easily relocated.

All parts are fully treated against moisture, temperature, and other climatic conditions. Variations in the performance of the receiver because of seasonal or geographic changes are held to a minimum, and the receiver will operate at its maximum efficiency throughout the world. Power consumption on the electric light line is 10 watts.

When the receiver is to be used in areas outside of continental U. S. A. where 110 volts AC/DC is usually not available, ballast adaptor No. S-15715 must be used. This equips the receiver for 220 volt AC or DC operation.

## *Operating Instructions*

**READ CAREFULLY — KNOW YOUR ZENITH**

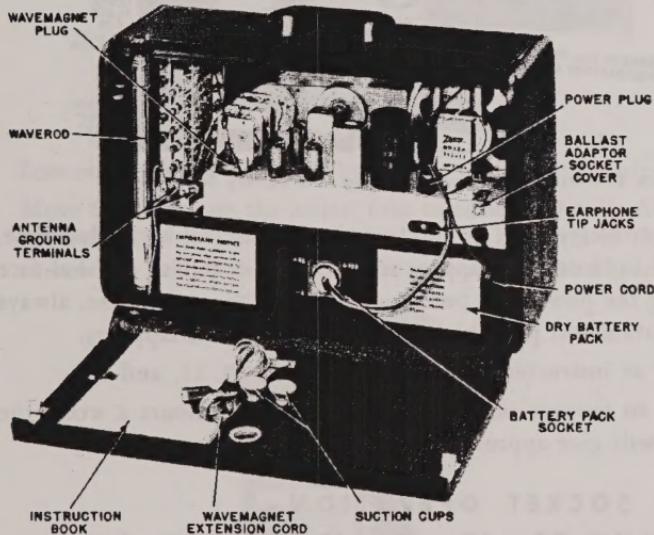


Figure 1.—Rear View, Back Cover Open.

### **1. PREPARING THE RECEIVER FOR OPERATION**

- A. OPEN REAR DOOR OF CASE by simply pulling on finger grip provided.
- B. Place the battery pack into the compartment provided below the

receiver chassis and insert battery cable plug into receptacle provided for on battery. When making replacement of the battery pack be positive to use only Zenith built Z985 battery pack.

## 2. BATTERY OPERATION

- A. INSERT LINE CORD PLUG into the Battery Saver Switch socket on top rear of chassis. (See Figure 2.)

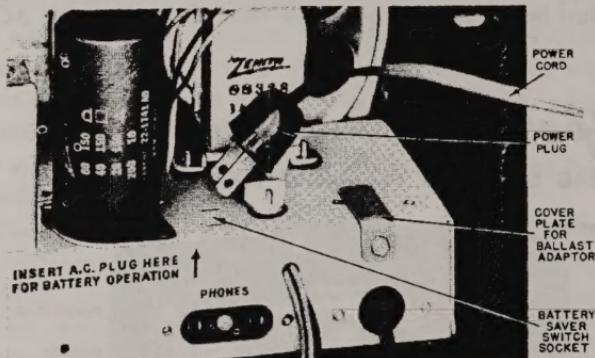


Figure 2.—Insertion of Line Cord Plug Into Battery Saver Socket.

- B. Turn the receiver ON by rotating the left control knob clockwise. The red indicator will appear in the lower center of the dial face showing the power has been turned on. When not in use, always make certain that power is off and the indicator disappears.
- C. Proceed as instructed under paragraphs 9, 10, 11, and 12.
- D. If used an average of 3 to 4 hours a day—30 hours a week, the battery will give approximately 150 hours of service.

## 3. LIGHT SOCKET OPERATION

(110-125 Volts DC or AC — 25 to 60 cycle operation.)

- A. Remove the line cord plug from CHANGE OVER socket. Removal of this plug automatically trips the Battery Saver switch and prevents battery drain while operating off light socket operation.
- B. Plug the line cord into any convenient light socket. After the receiver is in operation try reversing the plug for minimum hum or noise when operating on alternating current.
- C. On direct current reverse the plug if the set does not operate

after having been turned ON. On DIRECT CURRENT the set will operate ONLY with the plug in one position.

D. If the receiver is to be used in locations where current supply other than 110 volts AC or DC is available, ballast adaptor S 15715 should be used. This ballast adaptor assembly can be obtained from your local Zenith distributor and need only be plugged into the ballast tube socket. (See Figure 3.)



Figure 3.—Ballast Adaptor Inserted in Socket.

1. Loosen the screw holding the switch positioning plate.
2. Move the switch on the ballast tube to either 110 volts AC-DC, 220 volts DC or 220 volts AC position to conform to the type current on which the set is to be operated. (See Figure 4.)

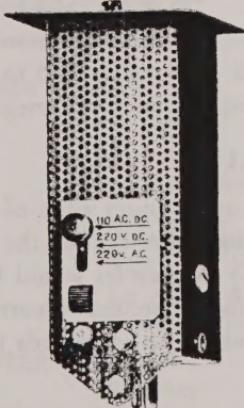


Figure 4.—Ballast Tube Switch Positions.

#### 4. TUNING DIAL

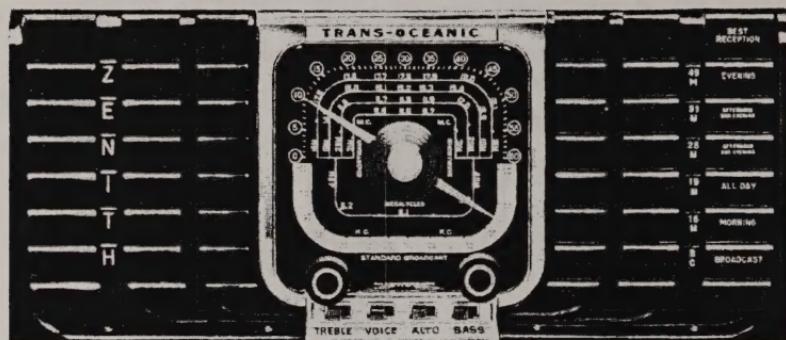


Figure 5.—Dial and Band Selector Buttons.

(See Figure 5.) Study the dial carefully. The broadcast band is calibrated in kilocycles with the zeros deleted for convenience. This is the white bottom scale indicated by the lower half of the pointer. The shortwave bands are spread and calibrated in megacycles, four are located on the upper half of the dial scale and one in the lower half. Read with the upper half or lower half of the pointer whichever the case may be.

#### THE SIX BAND RANGES ARE:

Broadcast-535 to 1620 kilocycles.      25 meters-11.5 to 12.1 megacycles.  
49 meters-6.0 to 6.2 megacycles.      19 meters-14.9 to 15.5 megacycles.  
31 meters-9.45 to 9.75 megacycles.      16 meters-17.5 to 18.1 megacycles.

(Kc. indicates kilocycles; Mc. indicates megacycles)

#### 5. SPLIT-SECOND SCALE

This feature is provided in the upper outer edge of the dial face to assure ease and accuracy in logging and relocating the foreign stations. Example: A station heard at 9.55 megacycles would be logged at 9.5 on the tuning band plus the number of seconds occurring on the split-second scale, which in this case would be 24 seconds (i. e.: 9.5 + .24).

#### 6. RADIO ORGAN

The tonal characteristics of the receiver may be regulated to the listeners preference by means of the four tone buttons below the dial. The combination of these four buttons in either of their two positions offers 16

possible tonal combinations. To operate push in the direction of the arrow, the portion of the tonal range is shown below each button.

## 7. HEADPHONES

In trains, dormitories, hospitals or schools, etc., it may be necessary to operate the receiver without disturbing nearby persons. The use of headphones is especially helpful for airplane travel. Special low impedance Zenith headphones, part number 39-10, available through your Zenith dealer, are easily adaptable to the chassis of the receiver. To connect these headphones press the earphone pins into the socket provided. (See Figure 6.) Attaching the headphones automatically disconnects the speaker.

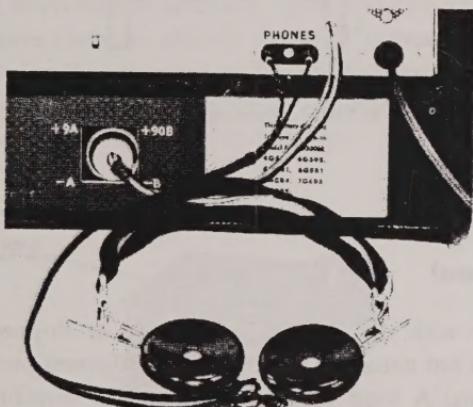


Figure 6.—Headphones Connected to Receiver.

## 8. TUBE COMPLEMENT

TYPE	RADIO TUBE	USE
	1 1U4	RF Amplifier
	1 1L6	Converter
	1 1U4	IF Amplifier
	1 1S5	AVC, 2nd Detector and 1st Audio Amplifier
	1 3V4	Power Amplifier

### SELENIUM RECTIFIER

1	212-5	Rectifier
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See Figure 7 for location of tubes on chassis.

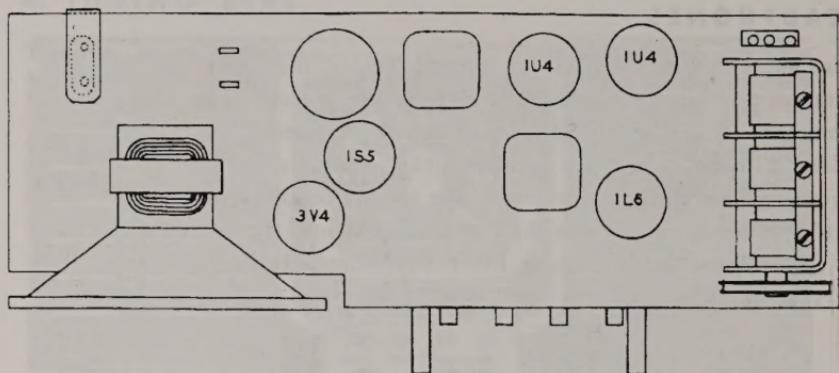


Figure 7.—Top View of Chassis Showing Tube Location.

## 9. STANDARD BROADCAST

### (Normal Conditions)

- A. Use the receiver with the antenna in position as shipped from the factory. It is not necessary to remove the Wavemagnet under normal conditions. A loop antenna is, naturally, directional. If reception of a station is not satisfactory, rotate the entire receiver for the position of greater signal and least interference. The directional property is also helpful in eliminating noises caused by local electrical devices.
- B. Press The Band Selector Button Marked Broadcast.
- C. Turn the set "On" with the left knob. Turn this control to a well advanced position and reset to the desired volume, after a station has been tuned in.
- D. Tune with the right hand knob and read the standard broadcast scale on the dial.
- E. Adjust RADIORGAN for desired tone.
- F. When hunting for distant broadcast or shortwave stations set the volume control knob to an advanced position. Turn it back to the desired level after a station has been tuned in.

## I. STANDARD BROADCAST RECEPTION (Steel Structures)

In steel structures and vehicles, remove the Broadcast Wavemagnet by turning off the thumb screws which hold the Wavemagnet in position on the inside of the front cover. Replace thumb screws to prevent their loss.

Open back of the case, and remove the red Wavemagnet extension cord and suction cups.

Snap one end of the red Wavemagnet extension cord on the broadcast Wavemagnet. Remove the plug already in the Wavemagnet socket, and place the plug on the other end of the red Wavemagnet extension cord into this socket. (See Figure 8.) Snap the suction cups on the two remaining Wavemagnet snap buttons.

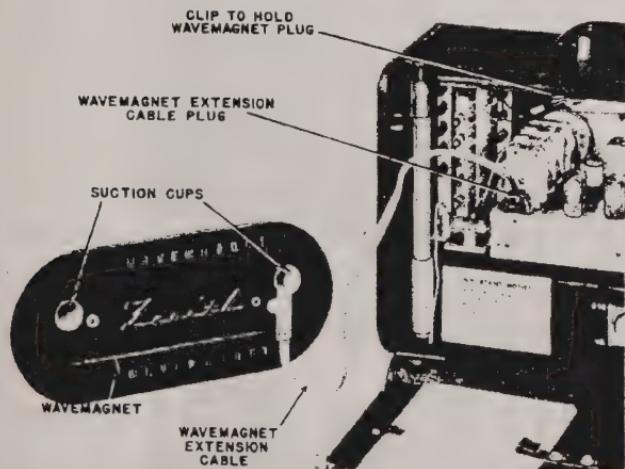


Figure 8.—Rear View of Receiver with the Wavemagnet Extension Cable Connected.

Moisten the suction cups and apply the Broadcast Wavemagnet to a corner of a window. (See Figure 9.)

Experiment with various positions on the window for best reception and minimum noise.



Figure 9.—Detachable Wavemagnet in Position on a Window Glass.

F. An antenna and ground terminal have been provided in the left rear of the receiver chassis, to which an external antenna and ground may be connected. It is only necessary to use these external antenna and ground connections when the receiver is to be operated in areas with extremely low signal strengths where it is difficult to receive a desired signal on the standard Wavemagnet. (See Figure 10.)

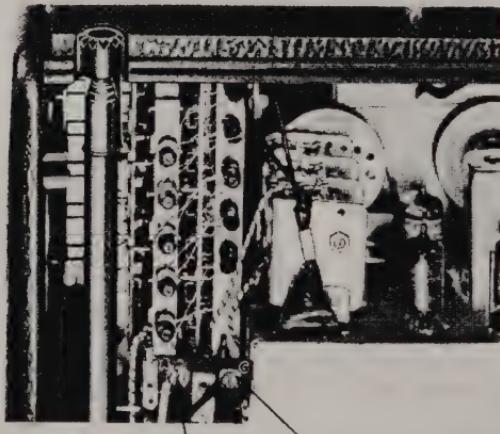


Figure 10.—Antenna and Ground Terminals.

## **SHORTWAVE RECEPTION**

### **(Average Conditions)**

Raise cover to upright position.

Turn Waverod button and extend the Waverod to its full length.  
(See Figure 11.)

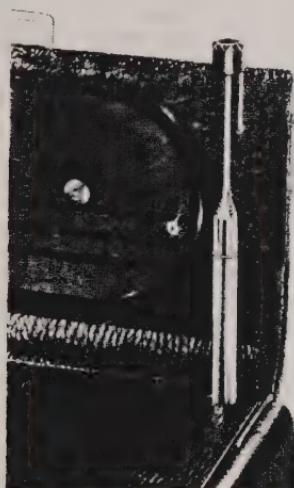


Figure 11.—Waverod Must Be Extended for Shortwave Reception.

Press desired shortwave band selector button.

Turn set "On" by rotating the left knob clockwise.

Tune the set with the right knob, tune very slowly, and read dial scale according to band button.

## **SHORTWAVE RECEPTION**

### **(In Areas With Extremely Low Signal Strength)**

An antenna and ground terminal have been provided in the left rear of the receiver chassis, (See Figure 10), to which an external antenna and ground may be connected. It is only necessary to use these external antenna and ground connections when the receiver is to be operated in areas with extremely low signal strength where it is difficult to receive a desired signal on the standard Waverod.

# LOG OF U.S. CLEAR CHANNEL STATIONS

(NOTE: For local and regional broadcast stations  
refer to local newspaper listings.)

CITY AND STATE	KC	CALL	CITY AND STATE	KC	CALL
<b>Alabama</b>			Chicago	1160	WJJD
Birmingham	1070	WAPI	Jacksonville	1180	WLDS
<b>Arkansas</b>			<b>Indiana</b>		
Blytheville	900	KLCN	Indianapolis	1070	WIBC
Little Rock	1010	KLRA	Fort Wayne	1190	WOWO
Hot Springs	1090	KTHS			
<b>California</b>			<b>Iowa</b>		
Los Angeles	640	KFI	Ames	640	WOI
Los Angeles	710	KMPC	Des Moines	1040	WHO
San Jose	740	KQW	Waterloo	1540	KXEL
San Francisco	810	KGO			
Modesto	860	KTRB	<b>Kansas</b>		
Glendale	870	KIEV	Coffeyville	690	KGGF
Visalia	940	KTKC	Pittsburg	810	KOAM
Los Angeles	1020	KFVD	Wichita	1070	KFBI
Los Angeles	1070	KNX			
San Francisco	1100	KJBS	<b>Kentucky</b>		
Pasadena	1110	KPAS	Henderson	860	WSQN
Stockton	1140	KGDM	Louisville	840	WHAS
Sacramento	1530	KFBK			
Bakersfield	1560	KPMC	<b>Louisiana</b>		
San Francisco	680	KPO	New Orleans	870	WWL
<b>Colorado</b>			Shreveport	1130	KWKH
Denver	850	KOA			
<b>Connecticut</b>			<b>Maryland</b>		
Hartford	1080	WTIC	Baltimore	1090	WBAL
<b>District of Columbia</b>					
Washington	1500	WTOP	<b>Massachusetts</b>		
<b>Florida</b>			Lawrence	680	WLAW
Miami	710	WFTL	Boston	850	WHDH
Gainesville	850	WRUF	Boston	1030	WBZ
<b>Georgia</b>			Springfield	1030	WBZA
Atlanta	750	WSB	Boston	1510	WMEX
Macon	940	WMAZ			
<b>Illinois</b>			<b>Michigan</b>		
Chicago	670	WMAQ	Detroit	760	WJR
Chicago	720	WGN	East Lansing	870	WKAR
Chicago	780	WBBM	Ann Arbor	1050	WPAG
Chicago	820	WAIT	Pontiac	1130	WCAR
Chicago	890	WENR			
Chicago	890	WLS	<b>Minnesota</b>		
Chicago	1000	WCFL	Minneapolis	770	WLB
Tuscola	1050	WDZ	Northfield	770	WCAL
Carthage	1080	WCAZ	Minneapolis	830	WCCO
Chicago	1110	WMBI	Minneapolis	1130	WDGY
			St. Paul	1500	KSTP
			<b>Missouri</b>		
			St. Joseph	680	KFEQ
			St. Louis	770	WEW
			Clayton	850	KFUO
			Kansas City	880	WHB
			St. Louis	1120	KMOX

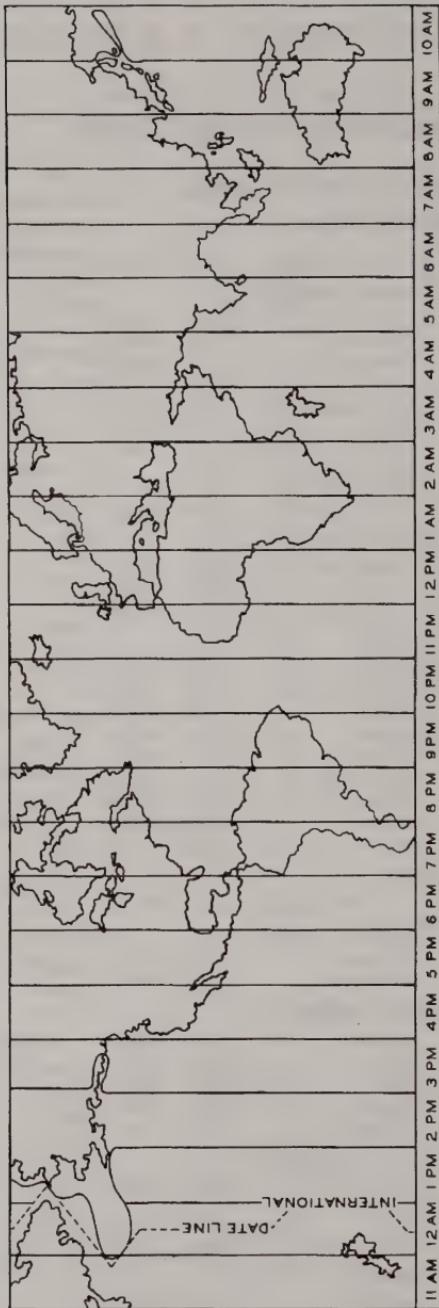
# LOG OF U.S. CLEAR CHANNEL STATIONS

(NOTE: For local and regional broadcast stations refer to local newspaper listings.)

AND STATE	KC	CALL
<b>Nebraska</b>		
Omaha	660	KOWH
Grand Island	750	KMMJ
Folk	780	WJAG
Lincoln	1110	KFAB
<b>New Hampshire</b>		
Portsmouth	750	WHEB
<b>New Mexico</b>		
Albuquerque	770	KOB
Albuquerque	1030	KOB
<b>New York</b>		
New York	660	WEAF
New York	710	WOR
New York	770	WJZ
Albany	810	WGY
New York	830	WNYC
Albany	870	WHCU
New York	880	WABC
New York	1010	WINS
New York	1050	WHN
New York	1130	WNEW
Binghamton	1180	WHAM
New York	1190	WLBI
Albany	1220	WGNY
Buffalo	1520	WKBW
New York	1560	WQXR
<b>North Carolina</b>		
Raleigh	680	WPTF
Wenderson	890	WHNC
Charlotte	1110	WBTV
<b>Pennsylvania</b>		
Erie	640	WHKK
Cincinnati	700	WLW
Columbus	820	WOSU
Cleveland	850	WJW
Cleveland	1100	WTAM
Cleveland	1220	WGAR
Cincinnati	1530	WCKY
<b>Oklahoma</b>		
Norman	640	WNAD
Ada	1170	KVOO
Oklahoma City	1520	KOMA
<b>Oregon</b>		
Portland	750	KXL
Portland	1080	KWJJ
Portland	1190	KEX

CITY AND STATE	KC	CALL
<b>Pennsylvania</b>		
Butler	680	WISR
Reading	850	WEIU
Philadelphia	990	WIBG
Pittsburgh	1020	KDKA
Philadelphia	1210	WCAU
York	900	WSBA
Philadelphia	1060	KYW
<b>South Dakota</b>		
Sioux Falls	1140	KSOO
<b>Tennessee</b>		
Nashville	650	WSM
Knoxville	990	WNOX
Nashville	1510	WLAC
<b>Texas</b>		
Dallas	660	KSKY
San Antonio	680	KABC
Houston	740	KTRH
Dallas	820	WFAA
Ft. Worth	820	WBAP
Corpus Christi	1010	KWBU
Corpus Christi	1030	KWBU
Dallas	1080	KRLD
San Antonio	1200	WOAI
<b>Utah</b>		
Salt Lake City	1160	KSL
<b>Virginia</b>		
Alexandria	730	WPIK
Richmond	1140	WRVA
<b>Washington</b>		
Seattle	710	KIRO
Seattle	770	KXA
Seattle	1000	KOMO
Seattle	1090	KEVR
Spokane	1510	KGA
<b>West Virginia</b>		
Wheeling	1170	WWVA
<b>Alaska</b>		
Fairbanks	660	KFAR
<b>Hawaii</b>		
Honolulu	760	KGU
<b>Puerto Rico</b>		
Mayaguez	990	WPRA

# WORLD WIDE TIME MAP



## BEST RECEPTION TABLE

BAND	MOST FAVORABLE TIME	MOST FAVORABLE DISTANCE
49M	Night — Winter.....	Day — 300 Miles Night over 1500 Miles
31M	Day — Late Afternoon.....	Over 500 Miles
25M	Day and Night — Winter and Evening or Late Summer.....	Day Under 2000 Miles Night Over 2000 Miles
19M	Early Afternoons.....	Over 1500 Miles
16M	Early Mornings and Summer Evenings.....	Over 1500 Miles

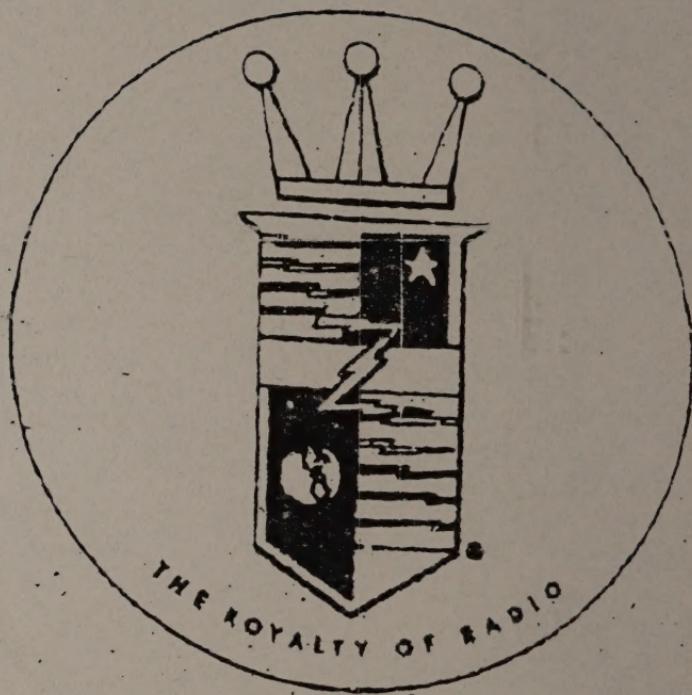
# **YOUR SHORT WAVE STATION LOG**

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